

III.B.2.N.D. TEMPORARILY FLOODED COLD-DECIDUOUS SHRUBLAND

III.B.2.N.d.6. SALIX (EXIGUA, INTERIOR) TEMPORARILY FLOODED SHRUBLAND ALLIANCE
(Coyote Willow, Sandbar Willow) Temporarily Flooded Shrubland Alliance

Alliance Identifier: A.947

***Salix exigua* / Barren Shrubland**

Coyote Willow / Barren Shrubland

ELEMENT CONCEPT

GLOBAL SUMMARY: This riparian shrubland is common in the Rocky Mountains, Colorado Plateau and Great Basin. It is composed of nearly pure stands of *Salix exigua*, with few other species. Exposed gravel, cobbles or sand characterize the ground cover, but an undergrowth of a few scattered forbs and grasses is usually present. This association occurs within the annual flood zone of rivers on point bars, islands, sand or cobble bars, and streambanks.

ENVIRONMENTAL DESCRIPTION

USFWS WETLAND SYSTEM: PALUSTRINE

Ouray National Wildlife Refuge Environment: Coyote willow establish on barren, moist point bars and islands and persist as more sediments are added to these first terrace sites. Other species, including Fremont cottonwood and salt-cedar also establish in this manner, therefore, stands of coyote willow on the Refuge usually contain these three species. Side channels of the Green River that are only intermittently flooded, are usually choked with coyote willow shrubs. Individual coyote willow shrubs and small patches are often observed in moist drainages and along dikes and levees in the Refuge.

Global Environment: This riparian shrubland is common in the Rocky Mountains, Colorado Plateau and Great Basin. Elevation ranges from 780-2600 m. This association occurs within the annual flood zone of rivers on point bars, islands, sand or cobble bars, and on streambanks occurring along a wide variety of stream reaches, from moderately sinuous and moderate-gradient reaches. It can form large, wide stands on mid-channel islands in larger rivers or narrow stringer bands on small, rocky tributaries. Substrates are typically coarse alluvial deposits of sand, silt and cobbles that are highly stratified vertically from flooding scour and deposition, often consisting of alternating layers of finer textured soil with organic material over coarser alluvium. Occasionally, this association occurs on deep pockets of sand. The lack of soil development and high ground cover of coarse alluvial material are key indicators for this association.

VEGETATION DESCRIPTION

Ouray National Wildlife Refuge Vegetation: Stands of *Salix exigua* / Barren Shrubland are often linear or crescent-shaped, because they establish on the edges of point bars and islands. Newly established coyote willow stands are typically less than two meters tall while older stands exceed 5m in height and may approach 8-10 m tall; all coyote willow stands are nearly devoid of understory vegetation. Common associates include Fremont cottonwood, peachleaf willow, and salt-cedar, but these woody species rarely account for more than 5% foliar cover in a stand. These habitats are also often subject to beaver foraging activity. Foliar cover of coyote willow is dense, sometimes reaching approximately 95%, but more commonly is in the 80% range. Coyote willow stands within the Refuge are nearly monotypic, however, one stand sampled included a side channel with a seep that was quite diverse. This seep supported three grass, one sedge, two rush-like, and eight forb species, however, the total foliar cover for all 14 species was less than 5%.

Global Vegetation: This riparian association is characterized by a sparse to dense tall-shrub (1.5-3 m) canopy composed of *Salix exigua* with ground cover of exposed gravel, cobbles or sand. Relatively low cover of several other shrubs and trees may be present including *Alnus incana*, *Salix monticola*, *Salix eriocephala* var. *ligulifolia*, *Salix irrorata*, *Salix lucida*, *Acer negundo*, *Abies lasiocarpa*, *Populus angustifolia*, *Populus deltoides*, and *Populus fremontii*. A sparse herbaceous layer may be present among the bare soil, gravel, cobbles, or boulders consisting of a wide variety of forbs and graminoids. *Mentha arvensis*, and species of *Carex*, *Eleocharis*, *Juncus*, *Schoenoplectus*, and *Equisetum* are often present. Introduced species, such as *Elaeagnus angustifolia*, *Tamarix* spp., *Bromus tectorum*, *Bromus inermis*, *Elytrigia repens*, *Poa pratensis*, *Agrostis stolonifera* (and other exotic forage species), *Taraxacum officinale*, *Conyza canadensis*, and *Lepidium latifolium*, have been reported from some stands.

Ouray National Wildlife Refuge Vegetation Mapping Project

Dynamics: This association is an early-seral type that colonizes newly created point bars and other recent alluvial deposits formed in rivers and streams (Kittel et al. 1999).

MOST ABUNDANT SPECIES

Ouray National Wildlife Refuge

Stratum	Species
TALL SHRUB	<i>Salix exigua</i> , <i>Populus fremontii</i> , <i>Salix amygdaloides</i> , <i>Tamarix ramosissima</i>

Global

Stratum	Species
TALL SHRUB	<i>Salix exigua</i>

CHARACTERISTIC SPECIES

Ouray National Wildlife Refuge

Species
Salix exigua, *Populus fremontii*, *Salix amygdaloides*, *Tamarix ramosissima*, *Conyza canadensis*

Global

Species
Salix exigua

OTHER NOTEWORTHY SPECIES

Ouray National Wildlife Refuge

Stratum	Species
HERBACEOUS	<i>Lepidium latifolium</i>

Global

Stratum	Species
N/A	

GLOBAL SIMILAR ASSOCIATIONS :

Salix exigua / Mesic Graminoids Shrubland (CEGL001203)

SYNONYMY:

Salix exigua / Barren Shrubland (Kittel et al. 1999)
Unclassified stands of *Salix exigua* (Jones and Walford 1995)
Salix exigua Community Type (Hansen et al. 1995)
Salix exigua Community Type (Hall and Hansen 1997)
Salix exigua-*Salix* spp./*Poa* spp. (Johnston 1987)
Salix exigua/Gravel Bar Community Type (Muldavin et al. 2000a)
Salix exigua / Barren Community Type (Padgett et al. 1989)
Salix exigua ssp. exigua Communities (Tuhy and Jensen 1982)

CLASSIFICATION COMMENTS

Ouray National Wildlife Refuge: N/A

Global Comments: In the western Great Plains this association includes stands composed of intermediates between *Salix interior* (= *Salix exigua ssp. interior*) and *Salix exigua* (= *Salix exigua ssp. exigua*) (Dorn 1997, G. Kittel pers. comm. 2001). These taxa were combined at the species level (Kartesz 1999). More information on the distribution of introgression between *Salix interior* (= *Salix exigua ssp. interior*) and *Salix exigua* (= *Salix exigua ssp. exigua*) is needed to fully understand the ranges of these two species.

ELEMENT DISTRIBUTION

Ouray National Wildlife Refuge Range: *Salix exigua* / Barren Shrubland stands are found along the banks of the Green River and on islands within the channel. Younger plants establish on the newly deposited, moist sediments nearest the river, while older stands occupy higher portions of point bars and islands in addition to side channels. Occasional coyote willow shrubs grow from dike, levee, and roadway edges and are also observed in intermittent drainages capable of supporting emergent wetlands.

Ouray National Wildlife Refuge Vegetation Mapping Project

Global Range: This riparian shrubland association is common at lower to middle elevations in the Great Basin, Colorado Plateau and Rocky Mountains extending out into the western Great Plains along major rivers.

Nations: US

States/Provinces: CO ID? UT WA

TNC Ecoregions: 10:C, 18:C, 19:C, 20:C, 27:C, 6:C

USFS Ecoregions: 311:C, 313A:CC, 313B:CC, 331C:CC, 331H:CC, 331I:CC, 341B:CC, 341C:CC, 342B:CC, 342D:CC, 342E:CC, 342G:CC, M331D:CC, M331E:CC, M331G:CC, M331H:CC, M331I:CC, M332A:CC, M332E:CC, M341B:CC, M341C:CC

Federal Lands: NPS (Zion); USFWS (Ouray)

ELEMENT SOURCES

Identifier: CEGL001200 **Confidence:** 1 **Conservation Rank:** G5

REFERENCES: Christy 1973, Dorn 1997, Hall and Hansen 1997, Hansen et al. 1995, Johnston 1987, Jones and Walford 1995, Kittel and Lederer 1993, Kittel et al. 1994, Kittel et al. 1995, Kittel et al. 1996, Kittel et al. 1999, Padgett et al. 1988b, Padgett et al. 1989, Thompson 2001, Tuhy and Jensen 1982, Von Loh 2000.